Name _____

STUDY GUIDE: Evolution

1. Change over time is called _____. The scientist that formulated the theory of evolution through natural selection was _____. He studied the process called _____ by which animal breeders selectively bred organisms to promote the occurrence of desirable traits in offspring.

2. _____ is how well an organism can survive and reproduce in an environment. An inherited characteristic that increases an organism's ability to survive and reproduce in a certain environment is called a/an _____. They can involve structures, functions, or behaviors but NOT _____ characteristics, as the latter can NOT be inherited.

3. Individuals with adaptations that are suited to their environment will _____ and _____. They are said to have _____ fitness. But individuals that are not well suited to the environment are said to have _____ fitness because they die with little to no offspring.

4. Explain 3 specific examples of adaptations that help animals cope with climate and other abiotic factors.

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5. Explain 3 specific examples of adaptations that help animals obtain food and water.

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6. Explain 4 specific examples of adaptations that help animals to defend against predators.

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7. Explain 4 specific examples of adaptations that help animals attract mates.

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8. Explain 4 specific examples of adaptations that help plants pollinate/disperse seeds.

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9. The process by which organisms that are most suited to their environment survive and reproduce is called _____. It is a mechanism for evolution that is driven by _____ and _____ change. It indirectly affects _____ by acting on _____.

10. Evidence of evolution is found in biogeography and _____, a _____ genetic code and _____ genes and proteins, and similar patterns of _____ development.

11. _____ structures are similar structures in different species of common ancestry, like the front limbs of vertebrates. (Such structures support descent with modification from a common ancestor.) _____ structures have a common function but differ in structures, like the wings of insects and birds. (Such structures are not the clue to common descent.) _____ structures are inherited from ancestors but lost much or all of their original function.

12. All of the genes, including different alleles, which are present in a population at any one time are known as a/an _____. The percentage an allele occurs in a gene pool is called the _____ and has nothing to do with whether an allele is dominant or recessive. Evolution involves a change in the frequency of alleles in a _____ over time.

13. Mutations, genetic recombination in sexual reproduction, and lateral gene transfer are all sources of genetic _____. Any change in the genetic material of a cell is called a/an _____. They may or may not affect _____, and they matter in _____ only if passed from one generation to the next.

14. Two sources of genetic recombination in sexual reproduction are _____ and _____.

15. The passing of genes from one organism to another that is not offspring is called _____ and is common in _____.

16. A random change in allele frequency is called _____. A change in the allele frequency following a dramatic reduction in the size of a population is called the _____. A change in allele frequencies as a result of migration of a small subgroup of a population is called the _____.

17. A situation in which allele frequencies in a population remain the same is called _____. The process by which individuals select mates based on heritable traits is called _____ selection.

18. Explain 5 conditions that can result in changes in allele frequencies, disturbing genetic equilibrium, and thus causing evolution to occur.

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19. Organisms that can interbreed and produce fertile offspring are known as a/an _____. The formation of a new species is called _____. _____ results when a species or population is separated so they can no longer interbreed.

20. In _____ isolation, two populations are separated by geographic barriers like mountains or water. In _____ isolation, two populations develop differences in courtship rituals. In _____ isolation, two or more species reproduce at different times.